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TREASURY FOR OASIA

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TAGS: SNAR SENV EAGR ETRD ECON CH VN

SUBJECT: CHINA QUIETLY USHERS IN AG BIOTECH REVOLUTION

(U) This cable is Sensitive But Unclassified. Please protect accordingly.

¶1. (SBU) In early November 2009, China authorized the first commercialization of major biotech food crops. A government website confirmed their approval of phytase corn and Bt rice. Despite little fanfare, this will revolutionize China's agriculture and may be the global agricultural development of the decade. Successful utilization of plant biotechnology by millions of Chinese rice farmers will likely significantly defuse, if not end, debate about the safety of the technology in China and possibly the developing world. END SUMMARY.

LITTLE FANFARE, MAJOR MOVE
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¶2. (SBU) On November 21, 2009, Beijing-based Origin Agritech announced that it is the first company to receive de-regulated status for genetically modified corn for planting in China. Confirmed by China's Ministry of Agriculture (MOA), Origin's phytase corn product received the final biosafety certificate that permits its domestic sale and marketing. China also granted a biosafety certificate to Huazhong University and Dr. Zhang Qifa for Bt rice. Reuters first announced the Bt rice news on November 27 and it was picked up by the Chinese media on November 30. On December 3, MOA posted formal confirmation of both authorizations on its website. The cultivation of corn will be limited to Shandong province and rice will be limited to Hubei province. Moreover, provincial seed registration procedures will likely prevent the first direct sales to farmers until at least the 2012 planting season.

¶3. (SBU) In 2008, seven million farmers grew biotech crops in China, about half of the global total. Chinese farmers grew biotech crops on 3.8 million hectares of land, making China the sixth largest producer of biotech crops by land area. Prior to this

announcement, the list of genetically modified plants approved for planting in China included: cotton, tomato, sweet pepper, petunia, poplar, and papaya. Cotton and poplar trees are the only biotech plants grown on a large-scale in China. There is also limited production of biotech papaya. China also currently permits 28 varieties of biotech corn, cotton, canola, sugar beet, and soybean to be imported for processing.

CHINA ALREADY USES BIOTECH, WHAT'S THE BIG DEAL?

¶4. (SBU) China's record on biotechnology is already impressive, but the agricultural world has been waiting expectantly for China to decide how it would approach the application of plant biotechnology in food crops. Why is the deregulation of biotech corn and rice is a ground-breaking event in Chinese agriculture and possible the history of this technology? The answer is that China's application of plant biotechnology was narrow and omitted several key aspects of a country that intends to be a leader in the technology. There are three main reasons why current application has heretofore been considered "narrow": 1) avoiding non-food crops; 2) using only proven technology; and 3) avoiding decisions related to environmental safety.

¶5. (SBU) First, China's commercial use of the technology is almost exclusively limited to non-food plants. Focusing on non-food plants minimizes the need to analyze the impact on human health, thus reducing risk to regulators and the personal consequences of making an incorrect decision. In addition, food security concerns do not come into play if the crop fails to produce as advertised or various factors lead to yields that are less than conventional varieties. Biotech papaya is an exception, but a very minor crop that accounts for far less than 1 percent of total biotech planted area. In fact, this rationale also applies to phytase corn because it will not be

used directly in human food.

¶6. (SBU) Second, the majority of the technology in use is proven technology, first tested and used in the United States. For example, the majority of the biotech planted area consists of a version of Roundup Ready cotton created in the United States and misappropriated for use in China. China's biotech papaya was also originally developed in the United States. Using proven technology also limits the risk taken by Chinese regulators, which makes these early deregulated events safe choices for hesitant bureaucrats.

¶7. (SBU) Third, the current biotech agricultural crops are not native to China or have relatively unimportant wild relatives in China. This is a very important consideration. The stakes are far higher for regulators when dealing with plants that have wild, weedy cousins or where wild relatives are still important sources of genetic information for seed developers. Pollen drift is of particular importance in the debate about biotech rice in China and the rest of Asia. For this reason, the Chinese government poured extensive time and money into environmental risk analysis.

¶8. (SBU) Though Chinese leaders have long stated that biotechnology can be safely used after proper evaluation, no large-scale commercially viable food crops were granted a safety certificate for the three political and scientific reasons mentioned above. Even though China has advanced research in all major crops and in dozens of traits, the Ministry of Agriculture has tabled previous biosafety certificate applications and prohibited certain advanced trials; this was notably the case for vitamin A enriched "golden rice." Many experts blamed the delay on risk-averse bureaucrats who wanted a zero-risk situation in terms of biosafety and press/public reaction in order to protect their careers.

LOGJAM BROKEN

¶9. (SBU) Many Chinese senior researchers had been discouraged from further research and investment in plant biotechnology by the barriers faced by developers of food crops and of China-origin technologies. Cotton is one of the most agrochemical-intensive

crops and Chinese researchers for years have shown the significant reduction in chemical use and improved worker health associated with biotech cotton. Despite cotton's obvious success, there was a feeling of frustration in the research community by 2008.

¶10. (SBU) However, in early October 2009, local contacts reported to AgAttache that there was a private meeting between Premier Wen Jiabao and developers of high tech products, including agricultural products, to discuss these issues. He reportedly told the group that while China was a leading investor in biotechnology, it was failing to get new events to market. Wen went on to emphasize that state funded technology should not only be developed, but used as well. This message was seen as the "final word" on the subject and a strong signal to reluctant bureaucrats that they could and should move forward and begin approving biotech events without fear of career suicide if problems arose or there was negative public reaction.

¶11. (SBU) Chinese researchers in all agricultural fields have been encouraged by Wen Jiabao's support and the new commercializations. Not only does it mean that existing research can now accelerate, it also means that the Ministry of Agriculture will no longer be reluctant to distribute the billions of dollars that have been pledged to agricultural research. China will now likely forge ahead with many of the first generation products that provide benefits to producers and also second generation traits that are more consumer, plant stress and environment focused. During bilateral meetings, China has repeatedly emphasized that their top priority is drought-tolerant traits in corn and other food crops.

¶12. (SBU) Background regarding China's biotechnology research and regulatory process can be found in FAS China's Annual Biotechnology Report. The most recent update was published on August 3, 2009, and is labeled as GAIN Report CH9060. It can be found at www.fas.usda.gov.

PRODUCERS EXPECTED TO BENEFIT FROM CHANGES

¶13. (SBU) Bt technology has a long history of use in the United States, including Bt potatoes, Bt corn, Bt sweet corn, Bt sugar beet, and Bt alfalfa. In the case of Bt crops, the gene of interest produces a protein that kills harmful plant pests and allows growers can use Bt traits as an alternative to spraying insecticides. The -Bt delta endotoxin was selected for many crops because it is highly effective at controlling Lepidoptera larvae at the stage when they cause the most damage to the plant. The protein is very selective, generally not harming insects in other orders (such as beetles, flies, bees and wasps).

¶14. (SBU) Phytase is currently used as an additive in animal feed to breakdown phytic acid in corn, which holds 60 percent of the phosphorus in corn. Phytase increases phosphorus absorption in animals by 60 percent. Phosphorus is an essential element for the growth and development of all animals, and plays key roles in skeletal structure and in vital metabolic pathways. Phytase, as an additive for animal feed, is mandatory in Europe, Southeast Asia, South Korea, Japan, and other regions for environmental purposes.

¶15. (SBU) Phytase transgenic corn, developed by and licensed by Origin from the Chinese Academy of Agricultural Science (CAAS) after seven years of study, can allow feed producers to eliminate the need to phytase and corn separately. It will also eliminate the need to mix the two ingredients together, thus saving time, machinery, and labor for feed producers.

¶16. (SBU) Origin's GMO phytase-producing corn is expected to reduce the need to add inorganic phosphate supplements to feed as the animals will directly absorb more phosphate. The replacement effect reduces feed cost. Additionally, inorganic phosphates may be contaminated with fluorine and heavy metal residues created in the manufacturing process. These fluorine and heavy metal residues in the feedstuff are toxic to animals and dangerous to humans.

¶17. (SBU) As described above, these traits are not directly related to yield. The benefits of these traits largely mean lower input costs for farmers (Bt rice) or the feed manufacturing chain (phytase corn), which ultimately benefit the farmer through lower input costs

or a premium sales price. There will be some yield advantage to Bt rice because of reduced pest damage, but the primary yield attributes of the seed remain its conventionally-bred genetics.

NOT SO FAST - PRACTICAL IMPACT LIMITED FOR NOW

¶18. (SBU) While granting the biosafety certificate is a milestone in terms of public policy, it will likely be several years before these seeds are in the hands of farmers. First, seed companies will need to register each biotech seed variety with provincial authorities and prove stability and effectiveness. [Note. This requirement applies to conventional varieties as well. End Note.] Testing can take two years or more. Following provincial approval, the company will then need to replicate enough seed for commercial sale. As a result, Chinese farmers may not see these seeds on sale until the 2012 planting season or beyond. Though farmers and livestock producers may want to see the technology in fields sooner, this is a normal timeframe for the development and marketing of new seeds in China, conventional or biotech. Another puzzling limitation is that the crops were each authorized for planting in only one province, which will severely constrict their commercial viability if the scope of use is not later broadened. Sources suggest that this limitation was the trade-off for being the

pioneering commercialization.

¶19. (SBU) The commercialization of these crops in China could pose challenges for U.S. regulators, especially if China decides not to seek import approval. U.S. regulators have no/limited knowledge of these events and, despite Chinese assurances, the events could get into trade channels, thus raising the possibility that a biotech event unapproved for use in the Unites States is being imported.

¶20. (SBU) Chinese (whole grain) rice exports are about $24 million and corn exports are very minimal. However, rice and corn by-products are pervasive in small quantities as food ingredients in processed foods, which make up the bulk of Chinese exports of food products to the United States. This makes exports of corn or rice containing products much larger but also hard to precisely determine. Though trade is small, how will China deal with exports? Will the Chinese companies seek regulatory approval for their products in export markets like the United States? MOA has stated to AgAttache that foreign registration is the company/developer's responsibility, though they will provide some informational resources in a way similar to what FAS does for U.S. companies.

¶21. (SBU) China has already had problems in biosafety containment with experimental Bt rice, which is somewhat similar to the U.S. experience with biotech rice. According to the Chinese Government, there was "a case of illegal use" of Bt 63 rice in Hubei province in 2005 that resulted in the limited but unapproved planting of the rice in 2005 and 2006. Though China claims to have eliminated Bt rice from cultivation, it was detected in export shipments to Europe and New Zealand in 2007 and 2008. Thus, questions about China's next steps relating to export markets in terms of deregulation and potential certification of food products have significance for U.S. regulators and consumers. Discussions on this subject were initiated by U.S. biotechnology regulators during the 2009 U.S./China Biotechnology Working Group meeting.

PRESS NOT INVITED SO FAR

¶22. (SBU) Surprisingly, the news about phytase corn was not even initially released in China and Bt rice not mentioned at all. The corn news was released by Origin for benefit of its US shareholders and Reuters announced the Bt rice event. The Origin CEO told AgAttache that MOA recommended that he not release the news, though he finally persuaded them to the valuable nature of the news for his investors. MOA is very conservative and risk averse when it comes to biotechnology policy and controversy and the Chinese have very close reign on negative comments about biotechnology in agriculture. [Note. MOA publically ignored the EU complaints about Bt rice contamination of export shipments and, with the exception of a

subdued Greenpeace, the Chinese press did not even run the story. End Note.]

¶23. (SBU) However, given that rice is such a staple part of most Chinese citizens' diets, a public campaign to promote Bt rice seems inevitable either now or when the rice hits the consumer market. Given the high profile of certain rice researchers/academicians and the developer Zhang Qifa, China is likely to roll out a high-visibility campaign to laud the achievements of its own researchers and smiling peasants whose health will improve due to using less pesticides. The first indications of a tentative press rollout are a series of small articles published in the People's Daily appearing on December 1 and 3.

COMMENT - GLOBAL SIGNIFICANCE

¶24. (SBU) This move by China may prove to be the concluding chapter in the initial debate about plant biotechnology. Though around for

decades, various actors have promoted doubts about safe use of the technology, especially in developing countries. Though almost thirty countries plant 140 million hectares each year, the big developing countries have not moved into biotech food crops in a significant way with the exception of large food exporters. As China moves to start using plant biotechnology, largely for domestic purposes, the size and interconnectedness of the country will expand the sheer numbers of farmers growing biotech crops, consumers eating the derived food, and products developed outside of the multinational technology companies. China's sheer size encourages other developing countries to follow its lead and marginalizes those blindly opposed to the technology itself. If the indications are correct and India also approves biotech food crops, the world will be a much more receptive place for the safe application of the technology than just a few years ago.

¶25. (SBU) However, forging ahead with the promise of biotechnology is predicated on China's safe use of it. While China has been rightly blamed for negligence in other instances regarding safety issues, the current application and safety assessment of biotechnology generally appears to have been done reasonably well with close attention paid to human, animal, and environmental impacts. China's increasing investment in this area and its potential impact on the U.S. consumer and environment suggest that cooperation with China grows more important as it becomes a global leader in this technology.

HUNTSMAN